

REMARKS

Co-pending Application

Applicants directs the attention of the Examiner to Patent No. 6,528,330, which is related to the present application.

Statutory Double Patenting Rejection

Claims 1 to 8 have been rejected under 35 USC §101 as claiming the same invention as that of claims 1 to 11 of prior US Patent No. 6,495,379. It is pointed out that the '379 patent has only claims 1 to 6.

The Examiner further stated that claims 1 to 8 of this application conflicts with claims 1 to 6 of Application No. 09/911,924. It is respectfully pointed out that Application No. 09/911,924 issued into US Patent No. 6,495,379. The rejection based on Application No. 09/911,924 is rendered moot in view of the issued '379 patent. Therefore, this response will address the rejection based on the '379 patent and not on counterpart application.

In determining whether a statutory basis for a double patenting rejection exists, the question to be asked is: Is the same invention being claimed twice? 35 U.S.C. 101 prevents two patents from issuing on the same invention. "Same invention" means identical subject matter. *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1984); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

The test for statutory double patenting rejection is whether a claim in the application could be literally infringed without literally infringing a corresponding claim in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970). That is, is there an embodiment of the invention that falls within the scope of one claim, but not the other? If there is such an embodiment, then identical subject matter is not defined by both claims and statutory double patenting would not exist. MPEP 804.

The claims of the present application is not the same or identical to the claims of the '379 patent. Claim 1 of the present application recites:

1. A method for manufacturing a semiconductor device comprising:
fixing semiconductor chips onto a substrate;
covering the semiconductor chips fixed onto the substrate with a common resin layer;
gluing an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer; and
measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer.

Claim 1 of the '379 patent recites:

1. A manufacturing method for a semiconductor device comprising steps of:
fixing semiconductor chips onto a substrate;
covering the semiconductor chips fixed onto the substrate with a common resin layer;
gluing an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer; and
measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer,
wherein positions of external electrodes on the substrate of one of the semiconductor chips are identified,
wherein the measurement is performed for the semiconductor chip whose position is identified, and for another semiconductor chips located around the semiconductor chip and the positions of the semiconductor chips are not identified.

Clearly, the '379 patent recites additional limitations not claimed in claim 1 of the present application. Therefore, the application DO NOT claim the same or identical invention, which is necessary for the statutory double patenting rejection. Claim 1 of the '379 patent recites additional steps (*i.e.* identifying positions of the external electrodes of one of the semiconductor chips and performing the measurement for the identified chip and for chips located around the semiconductor chip) that are not present in claim 1 of the present application. That is, there is an embodiment of the invention that falls within the scope of one claim, but not the other. Thus, the statutory double patenting rejection is improper. Applicants respectfully request withdrawal of the statutory double patenting rejection.

It is also pointed out that the above arguments apply equally to the '330 patent.

The Judiciary Created Doctrine of Obviousness-type Double Patenting Rejection

Claims 1 to 8 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 6 of co-pending Application No. 09/911,924. Again, it is pointed out that co-pending Application No. 09/911,924 matured into Patent No. 6,495,379. Thus, if the Examiner is of the view that claims 1 to 8 of the present application are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the '379 patent, Applicants are willing to file a terminal disclaimer. Furthermore, if the Examiner is of the view of that claims 1 to 8 of the present application are also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the '330 patent, Applicants are willing to file a terminal disclaimer with respect to '330 patent as well.

Claims below are reproduced for convenience. No amendments are being made.

Claims of the Present Application

1. (Previously Amended) A method for manufacturing a semiconductor device comprising:
 - fixing semiconductor chips onto a substrate;
 - covering the semiconductor chips fixed onto the substrate with a common resin layer;
 - gluing an adhesive sheet onto the resin layer;
 - cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer; and
 - measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer.
2. (Original) A method for manufacturing a semiconductor device according to claim 1, wherein the substrate and the resin layer is cut from the reverse surface of the substrate in a state that the adhesive sheet is glued to the resin layer.
3. (Original) A method for manufacturing a semiconductor device according to claim 1, wherein the substrate and the resin layer which are cut are integrally supported by the adhesive sheet.
4. (Original) A method for manufacturing a semiconductor device according to claim 1, wherein the substrate and the resin layer is cut by performing dicing in a state that the adhesive sheet is glued to the resin layer.
5. (Original) A method for manufacturing a semiconductor device according to claim 1, wherein external electrodes are provided on the reverse surface of the substrate and electrically connected to the semiconductor chips.

6. (Previously Amended) A method for manufacturing a semiconductor device according to claim 1, further comprising:

flattening the surface of the resin layer after covering the semiconductor chips with the resin layer.

7. (Original) A method for manufacturing a semiconductor device according to claim 1, wherein the circumferential edge of the adhesive sheet is fixed to a metal frame.

8. (Original) A method for manufacturing a semiconductor device according to claim 7, wherein a plurality of the substrates are glued to the adhesive sheet.

Claims of US Patent No. 6,495,379 (Our Ref.: 10417-089001; Your Ref.: F51-134015M/TOM)

1. A manufacturing method for a semiconductor device comprising steps of:
fixing semiconductor chips onto a substrate;
covering the semiconductor chips fixed onto the substrate with a common resin layer;
gluing an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer; and
measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer,
wherein positions of external electrodes on the substrate of one of the semiconductor chips are identified,
wherein the measurement is performed for the semiconductor chip whose position is identified, and for another semiconductor chips located around the semiconductor chip and the positions of the semiconductor chips are not identified.
2. A manufacturing method for a semiconductor device according to claim 1,
wherein the semiconductor chips whose position are not identified are four semiconductor chips located around the semiconductor chip whose position is identified.
3. A manufacturing method for a semiconductor device according to claim 1,
wherein the measurement is performed by using of needles of probes,
wherein the position of the semiconductor chip is identified by using of a camera,
wherein, for the measurement of the semiconductor chips, the camera and the needles of a probes are mounted at fixed positions, and the semiconductor chips are measured while being moved.
4. A manufacturing method for a semiconductor device according to claim 3,
wherein, to identify the position of an electrode on the substrate of the semiconductor chip, the field of view of the camera is reduced by masking to a distance equivalent in size to one of the

semiconductor chips.

5. A manufacturing method for a semiconductor device according to claim 1, wherein the substrate and the resin layer which are cut are integrally supported by the adhesive sheet.

6. A manufacturing method for a semiconductor device according to claim 1, wherein the external electrodes are provided on the reverse surface of the substrate and electrically connected to the semiconductor chips.

Claims of US Patent No. 6,528,330 (Our Ref.: 10417-090001; Your Ref.: F51-134016M/TOM)

1. A method for manufacturing a semiconductor device comprising:
 - ✓providing semiconductor chips onto a substrate;
 - ✓applying a common resin layer on the semiconductor chips;
 - attaching an adhesive sheet onto the resin layer;
 - ✓cutting the substrate and the resin layer while the adhesive sheet is attached to the resin layer;
 - measuring the semiconductor devices;
 - removing a semiconductor element from the adhesive sheet after performing the measurement of the semiconductor element; and
 - directly storing the semiconductor element in a carrier tape based on the measurements.
2. A method for manufacturing a semiconductor device according to claim 1, wherein the semiconductor elements are stored in the carrier tape in accordance with the measurements at least along one carrier line.
3. A method for manufacturing a semiconductor device according to claim 1, wherein the circumferential edge of the adhesive sheet is fixed to a metal frame, wherein the metal frame includes a bar code, wherein measurement data are managed by using the bar code.
4. A method for manufacturing a semiconductor device according to claim 1, wherein a plurality of the substrates are adhered to the adhesive sheet, and multiple sets of measurement data for the semiconductor elements are managed.
5. A method for manufacturing a semiconductor device comprising:

providing semiconductor chips onto a substrate;
applying a common resin layer on the semiconductor chips;
attaching an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer while the adhesive sheet is attached to the resin layer;
measuring the semiconductor devices;
removing a semiconductor element from the adhesive sheet after performing the measurement of the semiconductor element; and
directly storing the semiconductor element in a carrier tape based on the measurements.

6. A method for manufacturing a semiconductor device according to claim 5, wherein the semiconductor elements are stored in the carrier tape in accordance with the measurements at least along one carrier line.

7. A method for manufacturing a semiconductor device according to claim 5, wherein the circumferential edge of the adhesive sheet is fixed to a metal frame, wherein the metal frame includes a bar code, wherein measurement data are managed by using the bar code.

8. A method for manufacturing a semiconductor device according to claim 5, wherein a plurality of the substrates are adhered to the adhesive sheet, and multiple sets of measurement data for the semiconductor elements are managed.

9. A method for manufacturing a semiconductor device comprising:
providing semiconductor chips onto a substrate;
applying a common resin layer on the semiconductor chips;
attaching an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer while the adhesive sheet is attached to the resin layer;
measuring electrical characteristics of the semiconductor devices;

removing a semiconductor element from the adhesive sheet after performing the measurement of the semiconductor element; and
directly storing the semiconductor element in a carrier tape based on the measurements.

10. A method for manufacturing a semiconductor device according to claim 9, wherein the semiconductor elements are stored in the carrier tape in accordance with the characteristics at least along one carrier line.

11. A method for manufacturing a semiconductor device according to claim 9, wherein the circumferential edge of the adhesive sheet is fixed to a metal frame, wherein the metal frame includes a bar code, wherein measurement data are managed by using the bar code.

12. A method for manufacturing a semiconductor device according to claim 9, wherein a plurality of the substrates are adhered to the adhesive sheet, and multiple sets of measurement data for the semiconductor elements are managed.

13. A method for manufacturing a semiconductor device comprising:
fixing semiconductor chips onto a substrate;
covering the semiconductor chips fixed onto the substrate with a common resin layer;
gluing an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer;
measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer;
peeling a semiconductor element from the adhesive sheet after performing the measurement of the semiconductor element; and
directly storing the semiconductor peeled from the adhesive sheet in a carrier tape,

wherein the data for the semiconductor elements are managed when the positions and characteristics of the semiconductor elements are measured, and the semiconductor elements are stored in the carrier tape in accordance with the characteristics,

wherein the circumferential edge of the adhesive sheet is fixed to a metal frame,

wherein the metal frame includes a bar code,

wherein the data are managed by using the bar code.

14. A method for manufacturing a semiconductor device according to claim 13, wherein the semiconductor elements are stored in the carrier tape in accordance with the characteristics at least along one carrier line.

15. A method for manufacturing a semiconductor device according to claim 13, wherein a plurality of the substrates are adhered to the adhesive sheet, and multiple sets of data for the semiconductor elements are managed.

16. A method for manufacturing a semiconductor device comprising:
fixing semiconductor chips onto a substrate;
covering the semiconductor chips fixed onto the substrate with a common resin layer;
gluing an adhesive sheet onto the resin layer;
cutting the substrate and the resin layer in a state that the adhesive sheet is glued to the resin layer;

measuring the semiconductor devices in a state that the adhesive sheet is glued to the resin layer;

peeling a semiconductor element from the adhesive sheet after performing the measurement of the semiconductor element; and

directly storing the semiconductor peeled from the adhesive sheet in a carrier tape,

wherein the data for the semiconductor elements are managed when the positions and characteristics of the semiconductor elements are measured, and the semiconductor elements are stored in the carrier tape in accordance with the characteristics.

wherein a plurality of the substrates are adhered to the adhesive sheet, and multiple sets of data for the semiconductor elements are managed.

17. A method for manufacturing a semiconductor device according to claim 16, wherein the semiconductor elements are stored in the carrier tape in accordance with the characteristics at least along one carrier line.

8. A method for manufacturing a semiconductor device according to claim 16, wherein the circumferential edge of the adhesive sheet is fixed to a metal frame, wherein the metal frame includes a bar code, wherein the data are managed by using the bar code.